
FINAL CLOSURE REPORT

BUILDING 659 PCB STORAGE AREA REMEDIATION TOOELE ARMY DEPOT TOOELE, UTAH

**USACE Contract No. DACA05-97-D-0002
Task Order 018**

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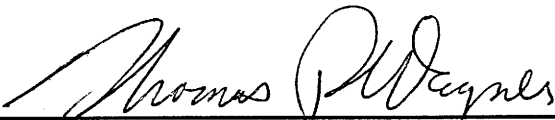
July 1999

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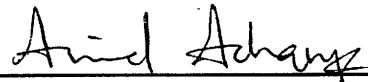
**Building 659
PCB Storage Area Remediation
Tooele Army Depot
Tooele, Utah**

**USACE Contract No. DACA05-97-D-0002
Task Order 018**

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1.0 INTRODUCTION

This closure plan details the activities and procedures utilized for remediation of polychlorinated biphenyls (PCB) impacted concrete floors within the PCB Storage Area (PCBSA) of Building 659 at Tooele Army Depot (TEAD), Tooele, Utah.

Allied Technology group, Inc., (ATG) prepared this report in response to and in accordance with the requirements of contract DACA05-97-D0002, Task Order 018 with the United States Army Corps of Engineers (USACE), Sacramento District.

1.1 Site Background

Building 659, Solid Waste Management Unit 33 (SWMU 33)/ Operable Unit 5 (OU5) is located at TEAD, Tooele, Utah (Figure 1-1). TEAD is an active military facility and Building 659 is located within the Base Realignment and Closure (BRAC) parcel which is designated to be transferred to public or private ownership (Figure 1-2).

The PCBSA is a TSCA-regulated facility at the northern half of Building 659 with a concrete floor measuring approximately 180 feet by 250 feet. An 8-inch high concrete berm is present around the perimeter of the building floor with diversion structures at each entrance for the containment of spills (USACE SOW, January 1998). The walls within the building are constructed of wood (Figure 1-3). Three types of transformers are known to have been stored within the PCBSA of Building 659 from 1979 to 1996. These included: non-PCB transformers (0-50 ppm of PCB), PCB-contaminated transformers (50-500 ppm) and PCB transformers (>500 ppm) according to the "Final Site Characterization Report" (Jacobs 1997). There were no transformers stored in the PCBSA at the time the remediation work began; however, miscellaneous wood crates, debris, and two storage racks were present within the PCBSA.

1.2 Scope and Objectives

The objective of the remedial efforts was to cleanup all residual PCB contamination on the concrete floor of the PCBSA to meet clean closure criteria. The remediation cleanup level (RCL) established for the concrete floors within the PCBSA for unrestricted use is 10 micrograms per 100 square centimeter ($10 \mu\text{g}/100 \text{ cm}^2$), according to the "Site Characterization Report" (Jacobs 1997).

- All work was done in accordance with the requirements of the contract and scope of work outlined in the *Task Order 018 Building 659 PCB Storage Area Remediation, Tooele Army Depot, Utah USACE, January 1998 (USACE SOW)*.

2.0 SUMMARY OF PREVIOUS SITE CHARACTERIZATION ACTIVITIES

Jacobs Engineering (JE) conducted a site characterization of the PCBSA during 1995 and 1996. The procedures, results and conclusions of the site characterization activities are presented in the "Final Site Characterization Report" (FSCR) dated March 1997. The following is a summary of the findings from the FSCR.

Samples were collected from the concrete floor, wood walls, and masonry walls of the PCBSA. All samples were composited and analyzed for the presence of residual PCB contamination. The following results were obtained:

- Total PCBs were found in discrete concrete core samples at concentrations as high as 7.1 mg/kg.
- Analysis of composite samples from the concrete surface indicated that no single sample result could have exceeded the non-restricted use criterion of 10 ppm (soil).
- Certain stained areas of the wood walls revealed PCB contamination at sub-ppm levels (< 1 ppm).
- No evidence of PCBs was found within the masonry walls.

Since concrete is defined as an impervious surface (40 CFR, Section 761.123), the highest discrete concrete core sample concentration of 7.1 mg/kg was compared to the soil limit of 25 mg/kg (restricted use) and 10 mg/kg (unrestricted use). Based on these comparisons, it was determined that contaminated concrete is not required to be removed at the PCBSA.

The presence of residual PCBs on concrete floors required decontamination of the concrete surface to a level at or below $10 \mu\text{g}/100 \text{ cm}^2$ to meet the solid surface criteria for unrestricted use. It was recommended that the concrete floor within the PCBSA be cleaned to remove the surface PCB contamination followed by testing with wipe samples. Confirmation wipe samples collected from the concrete floors after cleaning would verify that the established target decontamination concentration levels (TDCL) of $10 \mu\text{g}/100 \text{ cm}^2$ for PCBs is accomplished.

3.0 FIELD TASKS AND ACTIVITIES

The scope of work for accomplishing the remediation goals for this project included the planning, scheduling, and implementation of the following tasks:

- Utility setup
- Site Preparation

- Cleaning Concrete Floors
- Confirmation Wipe Sampling and Analysis
- Waste Handling, Sampling and Storage
- Site Restoration and Closure
- Preparation of Remediation Closure Report

The following sections discuss the approach and methodology utilized for performing the above mentioned tasks which commenced on 2 September 1998 and were completed on 4 November 1998 when the project generated wastes were picked up.

3.1 Utility Setup

ATG inspected the PCBSA and Building 659 to evaluate the availability of utilities needed for performing the planned remediation and restoration tasks. The two main utilities required for this work were water and electricity. ATG coordinated access to water and electricity sources with TEAD public works personnel. As indicated in the SOW, water was obtained from water supply well #3. Analytical results of the water from well #3 performed by installation as part of the base wide monitoring indicated PCBs were non-detect. ATG used the existing electrical power in Building 659 to provide temporary lighting needed to perform the remediation work. A rental generator supplied the power for the buffers, the power vacs, and the vacuum transfer pump. ATG setup a temporary on-site field office in the former radioactive materials storage area for the duration of the remediation efforts. A temporary laboratory was setup at the southern section of Building 659 adjoining the PCBSA.

3.2 Site Preparation

ATG contacted Mr. Larry McFarland in the TEAD Environmental Management Division (EMD) at (801) 833-3504 two weeks prior to field mobilization to coordinate and obtain access to Building 659. The following site preparation activities were accomplished at the PCBSA.

3.2.1 Miscellaneous Debris, Wood Crate and Storage Rack Removal

On September 9, 1998, ATG moved the empty wood crates and pallets from the floor of the PCBSA and temporarily stored them in the southern half of Building 659. In addition, there were two rows of storage racks in the PCBSA that were dismantled and moved to facilitate floor cleaning operations. The storage racks are 90 feet long, 15 feet wide and 20 feet high. The disassembled sections of the rack were stacked in the southern half of Building 659.

3.2.2 Soil and Dust Removal

Prior to commencing the surface cleaning activities, ATG removed all materials on the floor (as dust) from the concrete floor of the PCBSA. On September 10, 1998, ATG first sprayed small amounts of water on the concrete floor to minimize the amount of dust generated

during floor sweeping activities. ATG then used a street sweeper to sweep up all visible soil from the concrete floor. The hard to reach areas and building corners where the walls meet the floor were vacuumed with a commercial vacuum cleaner. This operation was accomplished with personnel in respirators with HEPA cartridges to protect against any possibility of inhaling contaminated dust. Soil and dust recovered from sweeping and vacuuming operations was contained in 55-gallon open top steel drums and properly sealed. Samples were collected from each drum and analyzed by the contract laboratory for off-site disposal. The waste containers were labeled in accordance with the TEAD Hazardous Waste Management Plan and transported daily to the TEAD 90 day storage yard pending the receipt of analytical results. Three wipe samples were collected at EC2, GC1, and FA3 locations following the soil and dust removal activities to provide a baseline for testing the effectiveness of the Less Than 10 cleaning solution.

3.2.3 Floor Sealing

Following the sweeping, all floor drains, cracks in the concrete floor, and any potential pathways for liquid transport were sealed watertight with a commercial silicone sealant. The sealant was pre-approved by the USACE prior to application.

3.3 First Surface Cleaning

First surface cleaning effort began on September 14, 1998, and ended on September 28, 1998. The surface area of the PCBSA cleaned during this remediation efforts consisted of approximately 41,650 square feet of concrete floor, column footings and perimeter containment curb. ATG used the surface cleaning solution "Less Than 10" for removing PCBs from the concrete surfaces. Less Than 10 is a remediation solution manufactured by Chemical Solutions International. A copy of Less Than 10 product information brochure is presented in Appendix A. Less Than 10 has been effectively used for cleaning up PCB contaminated surfaces at various industrial sites in the United States. This non-hazardous, non-flammable, fast-acting, biodegradable surfactant effectively reduces PCB contamination from concrete, brick and masonry surfaces by an average of 90% per application with a dwell time of only 15 minutes. ATG obtained a one day on-site field technical support and instruction from the manufacturer of Less Than 10 to configure the product application, scrubbing, washing, and removal procedures and methods. This support was obtained after site preparation was completed and on the first day of surface cleaning operations.

Surface cleaning operations proceeded from predetermined floor area sections identified as GC, FC, EC (North bay), then GA, FA, EA (South bay), and finally GB, FB, EB (middle bay) in Figure 1-3. The surface cleaning in each floor section was implemented as follows:

- A) All dirt and debris from the area to be decontaminated was removed.
- B) Less Than 10 was applied at full strength to the surface to be cleaned at a rate of one gallon per 150 sq. ft. for the 30 minute residence time application.
- C) To assist the cleaning action, a commercial buffer with a bristle pad was used.
- D) Following the 30 minute dwell time period, the area was thoroughly rinsed with water.
- E) All rinse water was vacuumed for disposal using a low flow (<1 gpm) high pressure wash and vacuum cleaner.
- F) The cleaned areas were sampled with a field wipe sample for confirmation to determine the level of PCB reduction.

Secondary cleaning was implemented by repeating steps A through G for those areas approved by the COR as shown on Figure 1-5.

All wash fluids and rinseate were controlled, recovered and contained in steel drums or storage tanks. Absorbent socks were used to contain wash fluids to the current section being cleaned and prevent them from flowing onto areas that were already clean. Samples were collected from the holding tank and sent to the contract laboratory for analyses for off-site disposal after completion of the field tasks. The waste containers were labeled and transported to a 4000 gallon holding tank at the TEAD 90 day storage yard on a daily basis.

3.4 Field Wipe Sampling and PCB Immunoassay Analyses

A field laboratory was set up in a secured room in the southern portion of Building 659. The room contained evidence of rodent activities and so was decontaminated with a bleach solution before the lab was set up. An ATG chemist conducted the field immunoassay PCB screening tests. The PCB field test utilized is manufactured by Strategic Diagnostics Inc. (SDI) and is called PCB EnSys 12T Wipe Test System, Rapid Immunoassay Screen. Appendix B contains the User's Guide for the Sample Extraction Kit and the PCB EnSys 12T Wipe Test System. Prior to using the test kit, SDI field representative provided instructions on the use of the kit and other technical support. The field tests were performed in accordance with EPA test method 4020 (immunoassay) for total PCBs.

After each section was cleaned the first time, a wipe sample was taken at the appropriate location (see Figure 1-3). The wipe sample collection protocol was as follows:

- 10 cm x 10 cm templates were made of clean, white cardboard to accurately define the 100 sq. cm extent for each wipe sample,

- clean, nitrile gloves were used for each sample to prevent cross contamination,
- gauze soaked with hexane was wiped with even pressure in two directions perpendicular to each other to ensure all surface contaminants were collected onto the gauze,
- gauze was placed in wide mouthed jar, sealed with a lid, wrapped in bubble wrap, and placed in a cooler with ice.

The wipe samples were then analyzed by the ATG field chemist in the field laboratory according to the protocols included in Appendix B. Appendix B also contains the results of the field immunoassay tests. All test results were interpreted as containing less than 10 $\mu\text{g}/100\text{cm}^2$, thus indicating that after the first cleaning the floor met the cleanup criteria and subsequent cleanings were not required. Field wipe samples were collected from September 14, 1998, to September 28, 1998.

3.5 Confirmation Wipe Sampling and Analyses

After the first surface cleaning at PCBSA, ATG collected confirmation wipe samples from the proposed sampling locations (Figure 1-3) and tested them for PCBs using a field immunoassay test kit. The same wipe sampling protocol was used as for the field wipe samples described above. The sample locations are consistent with the locations used by JE during the site characterization effort. The locations were originally designated in accordance with TSCA guidance. According to the work plan, if the test results indicated total PCB concentrations above the TDCL of 10 $\mu\text{g}/100\text{cm}^2$, the surface cleaning would be repeated for the sections of the floor determined to be contaminated. When the field test results indicated total PCBs at or below the TDCL, a set of wipe samples was collected directly adjacent to the immunoassay sample locations and sent to a USACE-approved contract laboratory for confirmation testing. The samples sent to the contract laboratory were analyzed by EPA test method 8082 for PCBs only on a 21-day turnaround time. Confirmation wipe samples were collected from September 14, 1998, to September 28, 1998.

3.6 Selective Second Surface Cleaning

Although all the field wipe samples indicated that the floor was clean after the first cleaning to the cleanup criteria of less than 10 $\mu\text{g}/100\text{cm}^2$, the COR directed that a second cleaning be done in selected areas. The areas selected for a second cleaning included oily stains and areas with a dark residue not removed by the first cleaning. Second surface cleaning began on September 25, 1998, and ended on October 5, 1998. The second surface cleaning was implemented as follows:

- A) Less Than 10 was applied at full strength to the surface to be cleaned at a reduced application rate for the 10-15 minute residence time application.
- B) To assist the cleaning action, the areas were scrubbed vigorously with wire brushes working the Less Than 10 into the affected areas.

C) The area was then thoroughly rinsed with water using a low flow (<1 gpm) high pressure wash.

D) All rinse water was vacuumed for disposal.

3.7 Waste Transport, Storage and Disposal

This section describes the activities and procedures utilized for handling, transporting and storing hazardous and non-hazardous waste generated during the site remediation activities.

3.7.1 Waste Materials

Waste materials generated or encountered during this project were:

- Potentially contaminated material removed from the floor as dust,
- Equipment decontamination water,
- Surface cleaning rinseate,
- Used PPE, consumable equipment/brushes, absorbent socks, and
- Non-hazardous debris and trash.

3.7.2 Hazardous Waste Storage and Transport

ATG contacted the TEAD EMD to establish a designated location in the 90 day storage area of TEAD (90 DSA) for storing hazardous waste generated during this project. The project site supervisor and site foreman attended a four-hour waste management course at TEAD the week prior to mobilization for the job.

At the end of each day, the generated hazardous and non-hazardous waste was contained as follows:

- Potentially contaminated soil from street sweeper operations was contained in liners and stored in 55-gallon drums and transported to the 90 DSA.
- Equipment decontamination water and surface cleaning rinseate was stored in 55-gallon drums at the PCBSA. The drum contents were emptied into a 250-gallon towable tank at the end of each day and transported to the 90 DSA. At the 90 DSA, the water and rinseate was transferred to a 4000-gallon, polyethylene tank.
- The used PPE and consumable equipment/brushes were temporarily stored at the 90-day storage yard in 55-gallon drums.
- Sorbent socks were placed in 55-gallon drums.

- Non-hazardous debris and trash was stored in garbage liners or 55-gallon drums at the PCBSA.

All hazardous waste was removed from the storage area within 90 days from the accumulation start date.

3.7.3 Waste Characterization and Disposal

The following activities describe waste characterization activities prior to final disposal:

- The 3300 gallons of contaminated wash liquid in the Baker Tank was analyzed for PCBs to determine final disposal options and found to contain 0.44 ppm of PCB Aroclor 1260. Based on this, the liquid waste was profiled as non-RCRA regulated waste and disposed of by stabilization at Safety Kleen's Grassy Mountain TSCA disposal cell. See Appendix D for waste profile and manifest, and Appendix C-4 for analytical results.
- Potentially contaminated dust from the concrete floor (soil debris) was analyzed for PCBs to determine final disposal options. PCB Aroclor 1254 was detected at 2.1 ppm and PCB Aroclor 1260 was detected at 1.5 ppm. The absorbent socks were analyzed for PCBs and none were detected. One drum of soil debris and six drums of absorbent socks were profiled as PCB contaminated soil/debris/rags/PPE and disposed of at Safety Kleen's Grassy Mountain TSCA disposal cell. See Appendix D for waste profile and manifest, and Appendix C-4 for analytical results.
- No waste characterization was done for the one drum of used PPE and consumable equipment/brushes as they were disposed as PCB contaminated construction debris at Safety Kleen's Grassy Mountain TSCA disposal cell. See Appendix D for waste profile.
- Non-contaminated debris and trash was disposed at the Tooele County Solid Waste Management Facility.

3.7.4 Hazardous Waste Transporter

The transporter for 3300 gallons of contaminated wash liquid was MP Environmental who are licensed to transport hazardous wastes in accordance with the State of Utah and US Department of Transportation requirements. The liquid was pumped into a 5,000 gallon vacuum truck and transported to Safety Kleen's Grassy Mountain TSCA disposal cell where it was stabilized and landfilled. The transporter for the 8 drums of solid PCB contaminated waste was Safety Kleen Transportation Group (TG) who picked up the drums and transported them to Safety Kleen's Grassy Mountain TSCA disposal cell. The waste streams were transported on November 4, 1998.

3.8 Site Restoration and Closure

Upon completion of the remediation activities, ATG restored the site, as nearly as possible to its pre-construction condition. The radioactive materials storage room used as an office was swept and all ATG materials and supplies were removed. The unused drums of Less Than 10 were temporarily stored in Building 659 but were eventually removed and returned to the manufacturer. All temporary utilities installed for the duration were disconnected and removed. The temporary supporting facilities for the field effort such as the Baker Tank were cleaned and removed and the porta-potty was returned. Site restoration activities were performed on October 5 and 6, 1998.

4.0 RESULTS DISCUSSION

Table 4-1 presents the results of the three pre-cleaning samples taken at the start of the project on 2 September 1998. The PCB concentrations ranged from non-detect to 0.24 $\mu\text{g}/100\text{cm}^2$ for PCB Aroclor 1254.

Table 4-2 presents the results of the field wipe samples taken after the first cleaning and analyzed by the field chemist using the field PCB immunoassay screening test. All field tests indicated PCB concentrations of less than 10 $\mu\text{g}/100\text{cm}^2$.

Table 4-3 presents the results of the confirmation wipe samples taken after the first cleaning and analyzed by the contract laboratory, GP Laboratories. The detected PCB concentrations ranged from 0.14 $\mu\text{g}/100\text{cm}^2$ to 1.8 $\mu\text{g}/100\text{cm}^2$. All but five samples were PCB Aroclor 1254; the five remaining samples were PCB Aroclor 1260.

The analytical results were reported between the Method Detection Limit (MDL) and practical Quantitation Limit (PQL) by the project laboratory. Any results below the PQL of 1.0 $\mu\text{g}/100\text{cm}^2$ should be considered an estimated value due to the uncertainty associated with reporting sample concentrations below the laboratory PQL. This, however, does not reflect on the quality of the laboratory data, only on the use of the value as an absolute number.

5.0 IMMUNOASSAY DATA REVIEW

Of the thirty (30) samples analyzed by the immunoassay kit, four (4) replicate analyses were performed using the sample extract for quality control purposes. All four replicate samples indicated concentrations of <10 $\mu\text{g}/100\text{cm}^2$ of PCB thus matching the original sample result. Four (4) method blanks were performed using methanol solution in accordance with quality control requirements for the immunoassay test kit. All four method blanks indicated non-detect PCB concentrations thus confirming no interferences of target compounds in the field laboratory environment, reagents, or apparatus. In addition to Table 4.2, field notes showing

the field immunoassay test results are provided in Appendix B. A wipe sample was analyzed for the EB grid with the Less Than 10 solution on the floor prior to vacuuming or rinsing to test the effectiveness of the dwell time duration. The results of this sample indicated PCB concentrations of $<10 \mu\text{g}/100\text{cm}^2$. A random wipe sample was collected from an oily spot within the EB grid to ascertain whether PCB containing oil would seep to the concrete surface after completion of the cleaning operations. This sample result also indicated PCB concentrations of $<10 \mu\text{g}/100\text{cm}^2$.

6.0 LABORATORY DATA REVIEW AND VALIDATION

The analytical laboratory data was reviewed and validated by Laboratory Data Consultants, Inc. (LDC) of Sacramento, California. The data validation was performed using EPA level III guidelines. Data validation reports (DVR) are presented in Appendix B along with the Laboratory Sample Analysis Reports and Sample Data Packages.

The data was validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, February 1994.
- USEPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II September 1994; update IIB, January 1995.
- Draft Final Quality Assurance Project Plan, Building 659 PCB Storage Area Remediation, Tooele Army Depot, ATG, June 1998.

6.1 Consultant Data Review

ATG has inventoried and reviewed the project data and deliverables from the contract laboratory for both completeness and accuracy. All data and deliverables received by ATG in support of this project have been subject to the following review measures:

Level 1 Inventory Data Review ATG has reviewed the contents and format of data and deliverables against the established set of guidelines contained in the QAPP.

Level 2 Technical Data Review This review was performed by LDC, a designated representative of ATG to provide independent review of data packages for reporting accuracy and technical validity. The review results are presented in Appendix C.

Level 3 Managerial Data Review ATG project manager has reviewed the data packages for consistency and compliance with project requirements.

In accordance with the procedures provided in the Work Plan and SAP, the following parameters were evaluated:

- Holding Times
- Laboratory Method Blanks
- Surrogate Recoveries (organic compounds analyzed by gas chromatographic methods only)
- Matrix Spike and Matrix Spike Duplicate Recoveries and Relative Percent Differences
- Blank Spike and Spike Duplicates

The above parameters were reviewed and evaluated by LDC and are presented in the DVR (Appendix C). The raw analytical data is also presented in Appendix C.

6.2 Data Usability and Completeness

Tables 5-1 to 5-4 summarize the data review and evaluation for data usability and completeness.

The overall assessment of laboratory data by LDC indicates that the overall quality of data produced by the contract laboratory (GP) is considered good and acceptable within the criteria specified in the QAPP.

7.0 CONCLUSIONS

The analytical results of the confirmation samples from the surface of the concrete floor of Building 659 indicate that the residual PCB levels are well below the cleanup standard of $10 \mu\text{g}/100\text{cm}^2$. Thus no further environmental cleanup action is required. The building is available for unrestricted use and site is closed.

8.0 REFERENCES

Jacobs Engineering, *Site Characterization Report, Closure of Building 659 PCB Storage Area*, Final, Tooele Army Depot.

Allied Technology Group, Inc., *Draft Final Quality Assurance Project Plan, Building 659 PCB Storage Area Remediation*, Tooele Army Depot, ATG, June 1998.

USACE 1996, *Chemical Data Quality Management (CDQM) for Hazardous, Toxic, Radioactive Waste Remedial Activities for USACE ER 110-1-263*, September 1997.

Allied Technology Group, Inc., *Draft Final Project Work Plan, Building 659 PCB Storage Area Remediation, Tooele Army Depot, Tooele, Utah*, June 1998.

TABLES

[illegible]

Precleaning Wipe Sample Collection and Test Log

Building 659, Tooele Army Depot

Table 4-2

Field Immunoassay Wipe Sample Collection After First Cleaning and Test Log
Building 659, Tooele Army Depot

Sample I.D.	Date Collected	Time Collected	Date Field Tested	PCBs Immunoassay			Date Sample Shipped to GP Lab	Room Temp	Comments
				Sample Results (ug/100cm ²)	Replicate Results (ug/100cm ²)	Method Blank Results (ug/100cm ²)			
TEAD-659-W-GC1-1	9/14/98	5:00 PM	9/14/98	<10			9/17/98	80° F	M. Shahbazian
TEAD-659-W-GC2-1	9/14/98	5:00 PM	9/14/98	<10			9/17/98	80° F	M. Shahbazian
TEAD-659-W-GC3-1	9/15/98	1:50 PM	9/15/98	<10		<10	9/17/98	85° F	M. Shahbazian
TEAD-659-W-GC4-1	9/15/98	1:50 PM	9/15/98	<10	<10		9/17/98	85° F	M. Shahbazian
TEAD-659-W-GC5-1	9/16/98	3:00 PM	9/16/98	<10		<10	9/17/98	85° F	M. Shahbazian
TEAD-659-W-FC1-1	9/16/98	3:00 PM	9/16/98	<10			9/17/98	85° F	M. Shahbazian
TEAD-659-W-FC2-1	9/16/98	3:00 PM	9/16/98	<10			9/17/98	85° F	M. Shahbazian
TEAD-659-W-FC3-1	9/16/98	3:00 PM	9/16/98	<10			9/17/98	85° F	M. Shahbazian
TEAD-659-W-FC4-1	9/16/98	3:00 PM	9/16/98	<10	<10		9/17/98	85° F	M. Shahbazian
TEAD-659-W-EC1-1	9/17/98	4:05 PM	9/17/98	<10		<10	9/17/98	80° F	M. Shahbazian
TEAD-659-W-EC2-1	9/17/98	4:05 PM	9/17/98	<10			9/17/98	80° F	M. Shahbazian
TEAD-659-W-EC3-1	9/17/98	4:05 PM	9/17/98	<10			9/17/98	80° F	M. Shahbazian
TEAD-659-W-EC4-1	9/17/98	4:05 PM	9/17/98	<10	<10		9/17/98	80° F	M. Shahbazian
TEAD-659-W-GA1-1	9/22/98	2:25 PM	9/22/98	<10		<10	9/24/98	72° F	M. Shahbazian
TEAD-659-W-GA2-1	9/22/98	2:25 PM	9/22/98	<10			9/24/98	72° F	M. Shahbazian
TEAD-659-W-FA1-1	9/22/98	2:25 PM	9/22/98	<10			9/24/98	72° F	M. Shahbazian
TEAD-659-W-FA2-1	9/22/98	2:25 PM	9/22/98	<10			9/24/98	72° F	M. Shahbazian
TEAD-659-W-FA3-1	9/22/98	2:25 PM	9/22/98	<10			9/24/98	72° F	M. Shahbazian
TEAD-659-W-EA1-1	9/22/98	4:40 PM	9/22/98	<10			9/24/98	74° F	M. Shahbazian
TEAD-659-W-EA2-1	9/22/98	4:40 PM	9/22/98	<10	<10		9/24/98	74° F	M. Shahbazian
TEAD-659-W-GB1-1	9/24/98	2:30 PM	9/24/98	<10			9/24/98	82° F	M. Shahbazian
TEAD-659-W-GB2-1	9/24/98	2:30 PM	9/24/98	<10			9/24/98	82° F	M. Shahbazian
TEAD-659-W-GB3-1	9/24/98	2:30 PM	9/24/98	<10			9/24/98	82° F	M. Shahbazian
TEAD-659-W-FB1-1	9/24/98	2:30 PM	9/24/98	<10			9/24/98	82° F	M. Shahbazian
TEAD-659-W-FB2-1	9/24/98	2:30 PM	9/24/98	<10			9/24/98	82° F	M. Shahbazian
TEAD-659-W-FB3-1	9/24/98	2:30 PM	9/24/98	<10			9/24/98	82° F	M. Shahbazian
TEAD-659-W-EB1-1	9/29/98	12:40 PM	9/29/98	<10			9/29/98	75° F	T. Wagner
TEAD-659-W-EB2-1	9/29/98	12:43 PM	9/29/98	<10			9/29/98	75° F	T. Wagner
TEAD-659-W-EB3-1	9/29/98	12:46 PM	9/29/98	<10			9/29/98	75° F	T. Wagner
TEAD-659-W-EB4-1	9/29/98	12:50 PM	9/29/98	<10			9/29/98	75° F	T. Wagner

Table 4-3
Confirmation Wipe Sample Collection and Test Log
Building 659, Tooele Army Depot

Sample I.D.	Date Collected	Time Collected	PCBs Aroclor 1254 or 1260* GP Lab Results (ug/100cm ²)	Date Sample Shipped To GP Lab	Comments Sample Collected By:
TEAD-659-W-GC1-F	9/17/98	3:34 PM	1.8	9/18/98	M.Shahbazian
TEAD-659-W-GC2-F	9/17/98	3:36 PM	0.33	9/18/98	M.Shahbazian
TEAD-659-W-GC3-F	9/17/98	3:39 PM	0.51	9/18/98	M.Shahbazian
TEAD-659-W-GC4-F	9/17/98	3:41 PM	0.14	9/18/98	M.Shahbazian
TEAD-659-W-GC5-F	9/17/98	3:43 PM	0.19	9/18/98	M.Shahbazian
TEAD-659-W-FC1-F	9/17/98	3:44 PM	0.23	9/18/98	M.Shahbazian
TEAD-659-W-FC2-F	9/17/98	3:53 PM	0.22	9/18/98	M.Shahbazian
TEAD-659-W-FC3-F	9/17/98	3:56 PM	0.28	9/18/98	M.Shahbazian
TEAD-659-W-FC4-F	9/17/98	3:58 PM	0.29	9/18/98	M.Shahbazian
TEAD-659-W-EC1-F	9/17/98	5:38 PM	0.24	9/18/98	M.Shahbazian
TEAD-659-W-EC2-FR	9/24/98	3:07 PM	0.21	9/24/98	M.Shahbazian
TEAD-659-W-EC3-F	9/17/98	5:42 PM	0.21	9/18/98	M.Shahbazian
TEAD-659-W-EC4-F	9/17/98	5:44 PM	0.17	9/18/98	M.Shahbazian
TEAD-659-W-GB1-F	9/24/98	4:29 PM	0.35	9/24/98	M.Shahbazian
TEAD-659-W-GB2-F	9/24/98	4:31 PM	0.57*	9/24/98	M.Shahbazian
TEAD-659-W-GB3-F	9/24/98	4:33 PM	0.2	9/24/98	M.Shahbazian
TEAD-659-W-FB1-F	9/24/98	4:37 PM	0.21	9/24/98	M.Shahbazian
TEAD-659-W-FB2-F	9/24/98	4:39 PM	0.21	9/24/98	M.Shahbazian
TEAD-659-W-FB3-F	9/24/98	4:40 PM	0.32	9/24/98	M.Shahbazian
TEAD-659-W-GA1-F	9/24/98	2:38 PM	0.28*	9/24/98	M.Shahbazian
TEAD-659-W-GA2-F	9/24/98	2:41 PM	0.3	9/24/98	M.Shahbazian
TEAD-659-W-FA1-F	9/24/98	2:43 PM	0.18	9/24/98	M.Shahbazian
TEAD-659-W-FA2-F	9/24/98	2:45 PM	0.14	9/24/98	M.Shahbazian
TEAD-659-W-FA3-F	9/24/98	2:46 PM	0.23	9/24/98	M.Shahbazian
TEAD-659-W-EA1-F	9/24/98	2:47 PM	1.5	9/24/98	M.Shahbazian
TEAD-659-W-EA2-F	9/24/98	2:49 PM	2.7	9/24/98	M.Shahbazian
TEAD-659-W-EB1-F	9/29/98	4:00 PM	0.47*	9/29/98	T.Wagner
TEAD-659-W-EB2-F	9/29/98	4:04 PM	<1	9/29/98	T.Wagner
TEAD-659-W-EB3-F	9/29/98	4:08 PM	0.15*	9/29/98	T.Wagner
TEAD-659-W-EB4-F	9/29/98	4:12 PM	0.19*	9/29/98	T.Wagner

Table 5-1
Data Evaluation Summary for PCBs in SDG 9809028

Evaluation Parameters and Criteria	Data Usability and Completeness
Holding times	Met requirements, data is acceptable.
GC/MS instrument performance check	Met requirements, data is acceptable.
Initial Calibration (IC)	Performed at required frequencies, %RSD were less than or equal to 20% for selected compounds. Data is acceptable.
Continuing Calibration (CC)	Performed at required frequencies. %D were less than or equal to 15% QC limits. Data is acceptable.
Blanks	No contaminants were found in method blanks. Data is acceptable. No field blanks were taken.
Surrogate Spikes	Surrogate recoveries (%R) were within QC limits. Data is acceptable.
Matrix Spike (MS) and Matrix Spike Duplicates (MSD)	MS and MSD were not required and not performed.
Laboratory Control Samples (LCS)	%R were within QC limits. Data is acceptable.
Internal Standards	All areas and retention times were within QC limits. Data is acceptable.
Target compound identification	Raw data were not reviewed for this SDG.
Compound quantitation and CRQLs	Raw data were not reviewed for this SDG.
Field Duplicates	No field duplicates were necessary and thus not taken.
System Performance	Raw data were not reviewed for this SDG.
Data qualification summary	Data is acceptable and valid. See DVR for details and flags.
Percent completeness	100%

Table 5-2
Data Evaluation Summary for PCBs in SDG 9809137

Evaluation Parameters and Criteria	Data Usability and Completeness
Holding times	Met requirements, data is acceptable.
GC/MS instrument performance check	Met requirements, data is acceptable.
Initial Calibration (IC)	Performed at required frequencies, %RSD were less than or equal to 20% for selected compounds. Data is acceptable.
Continuing Calibration (CC)	Performed at required frequencies. %D were less than or equal to 15% QC limits. Data is acceptable.
Blanks	No contaminants were found in method blanks. Data is acceptable. No field blanks were taken.
Surrogate Spikes	Surrogate recoveries (%R) were within QC limits. Data is acceptable.
Matrix Spike (MS) and Matrix Spike Duplicates (MSD)	MS and MSD were not required and not performed.
Laboratory Control Samples (LCS)	%R were within QC limits. Data is acceptable.
Internal Standards	All areas and retention times were within QC limits. Data is acceptable.
Target compound identification	Raw data were not reviewed for this SDG.
Compound quantitation and CRQLs	Raw data were not reviewed for this SDG.
Field Duplicates	No field duplicates were necessary and thus not taken.
System Performance	Raw data were not reviewed for this SDG.
Data qualification summary	Data is acceptable and valid. See DVR for details and flags.
Percent completeness	100%

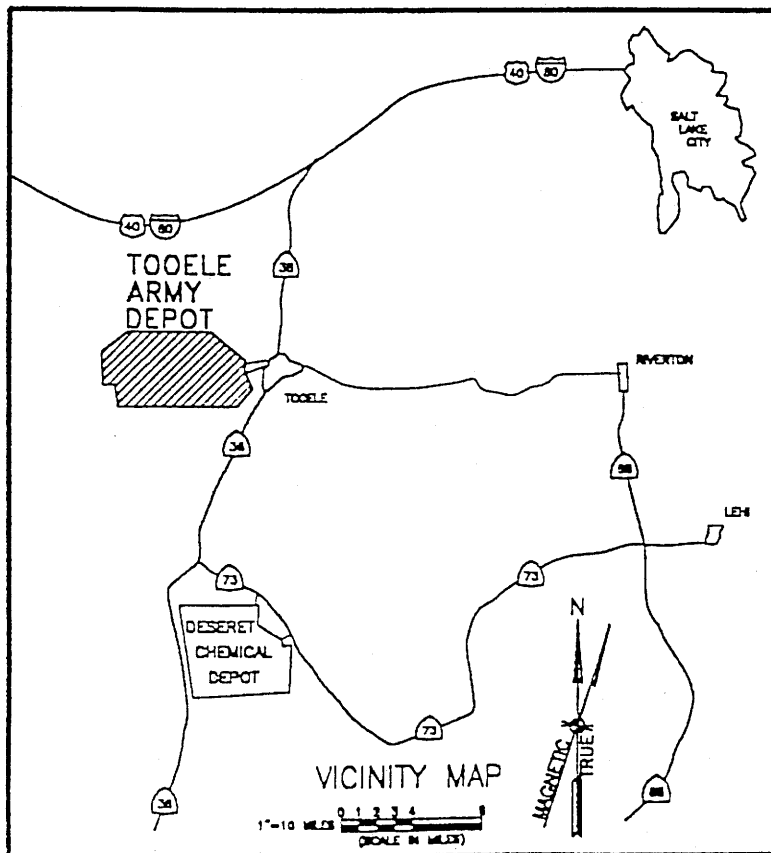
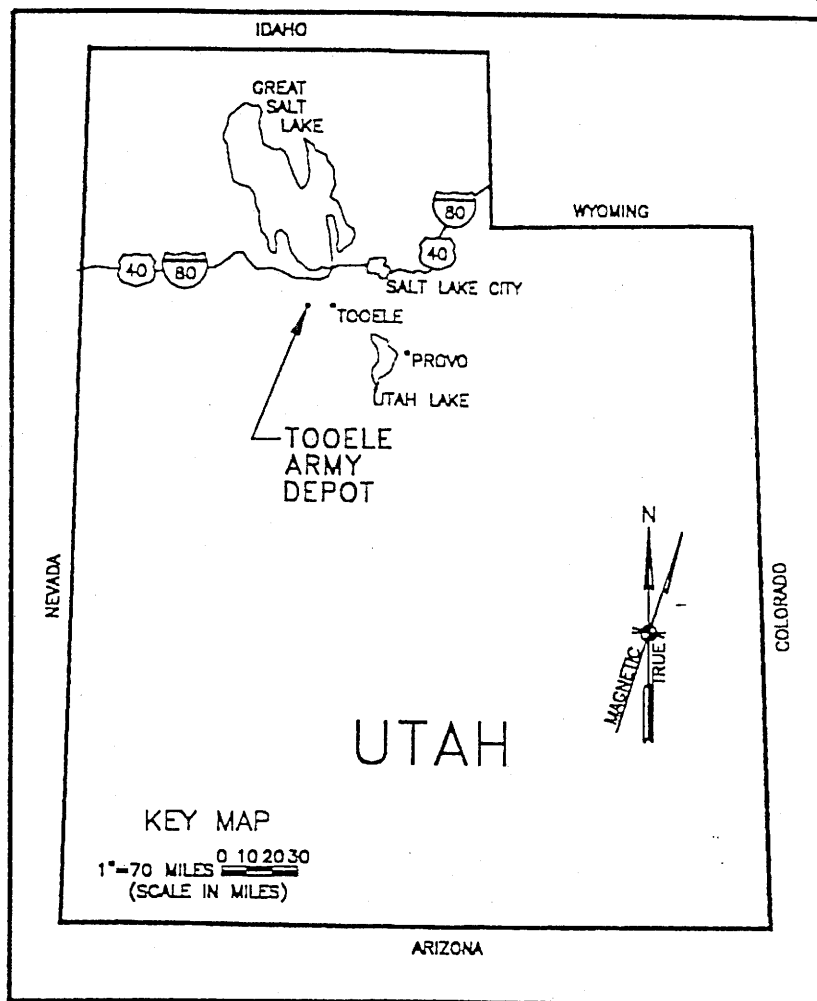
Table 5-3
Data Evaluation Summary for PCBs in SDG 9809161


Evaluation Parameters and Criteria	Data Usability and Completeness
Holding times	Met requirements, data is acceptable.
GC/MS instrument performance check	Met requirements, data is acceptable.
Initial Calibration (IC)	Performed at required frequencies, %RSD were less than or equal to 20% for selected compounds. Data is acceptable.
Continuing Calibration (CC)	Performed at required frequencies. %D were less than or equal to 15% QC limits. Data is acceptable.
Blanks	No contaminants were found in method blanks. Data is acceptable. No field blanks were taken.
Surrogate Spikes	Surrogate recoveries (%R) were within QC limits. Data is acceptable.
Matrix Spike (MS) and Matrix Spike Duplicates (MSD)	MS and MSD were not required and not performed.
Laboratory Control Samples (LCS)	%R were within QC limits. Data is acceptable.
Internal Standards	All areas and retention times were within QC limits. Data is acceptable.
Target compound identification	Raw data were not reviewed for this SDG.
Compound quantitation and CRQLs	Raw data were not reviewed for this SDG.
Field Duplicates	No field duplicates were necessary and thus not taken.
System Performance	Raw data were not reviewed for this SDG.
Data qualification summary	Data is acceptable and valid. See DVR for details and flags.
Percent completeness	100%

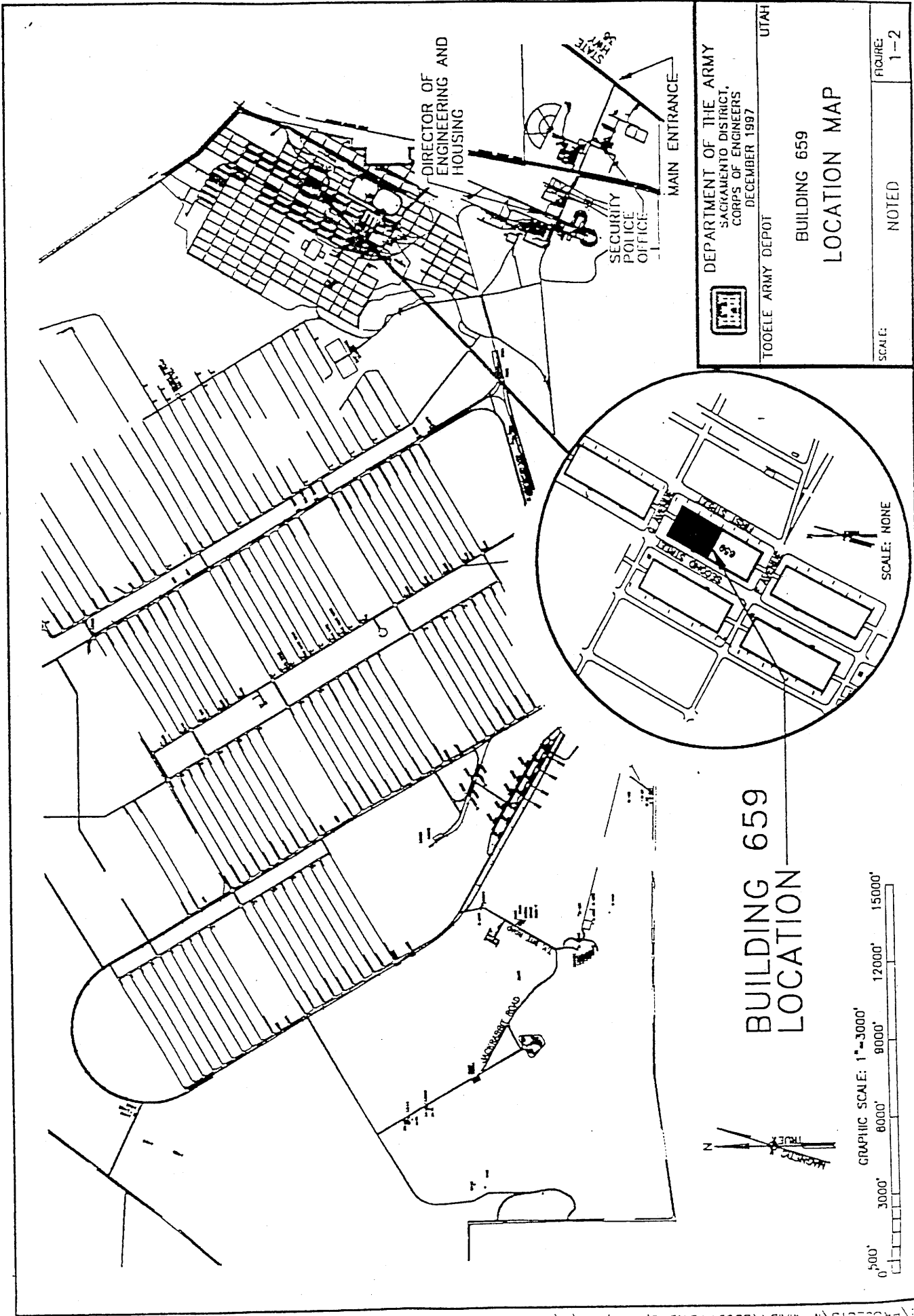
Table 5-4
Data Evaluation Summary for PCBs in SDG 9810004


Evaluation Parameters and Criteria	Data Usability and Completeness
Holding times	Met requirements, data is acceptable.
GC/MS instrument performance check	Met requirements, data is acceptable.
Initial Calibration (IC)	Performed at required frequencies, %RSD were less than or equal to 20% for selected compounds. Data is acceptable.
Continuing Calibration (CC)	Performed at required frequencies. %D were less than or equal to 15% QC limits. Data is acceptable.
Blanks	No contaminants were found in method blanks. Data is acceptable. No field blanks were taken.
Surrogate Spikes	Surrogate recoveries (%R) were within QC limits. Data is acceptable.
Matrix Spike (MS) and Matrix Spike Duplicates (MSD)	MS and MSD were not required and not performed.
Laboratory Control Samples (LCS)	%R were within QC limits. Data is acceptable.
Internal Standards	All areas and retention times were within QC limits. Data is acceptable.
Target compound identification	Raw data were not reviewed for this SDG.
Compound quantitation and CRQLs	Raw data were not reviewed for this SDG.
Field Duplicates	No field duplicates were necessary and thus not taken.
System Performance	Raw data were not reviewed for this SDG.
Data qualification summary	Data is acceptable and valid. See DVR for details and flags.
Percent completeness	100%

FIGURES

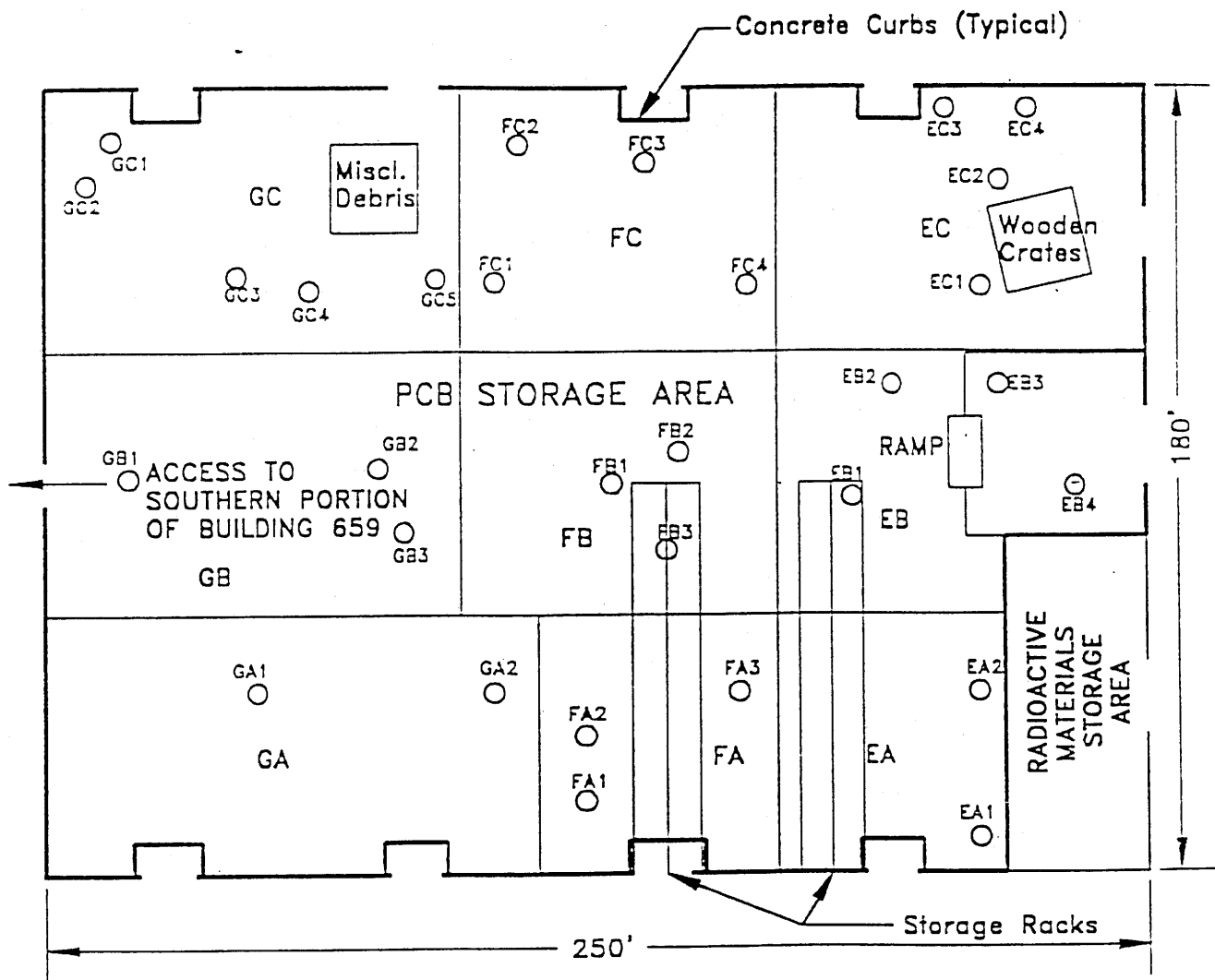


 DEPARTMENT OF THE ARMY SACRAMENTO DISTRICT, CORPS OF ENGINEERS DECEMBER 1997		UTAH
TOOELE ARMY DEPOT		
BUILDING 659 VICINITY MAPS		
SCALE:	NOTED	FIGURE 1-1



 DEPARTMENT OF THE ARMY SACRAMENTO DISTRICT, CORPS OF ENGINEERS DECEMBER 1997		UTAH TOOELE ARMY DEPOT BUILDING 659 LOCATION MAP	SCALE: NOTED	FIGURE: 1-2
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C:\PROJECTS\M-MAIDR\0659M102.DWG, 1"=40', 12/4/97



LEGEND:



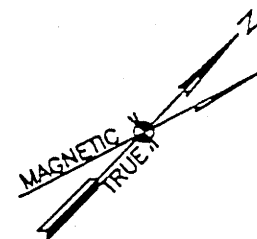
FLOOR AREA TO BE CLEANED
(42,340 SQ.FT. APPROX)

EA

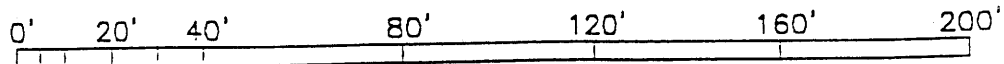
FLOOR AREA SECTION



WIPE SAMPLE LOCATION



GRAPHIC SCALE: 1"=40'



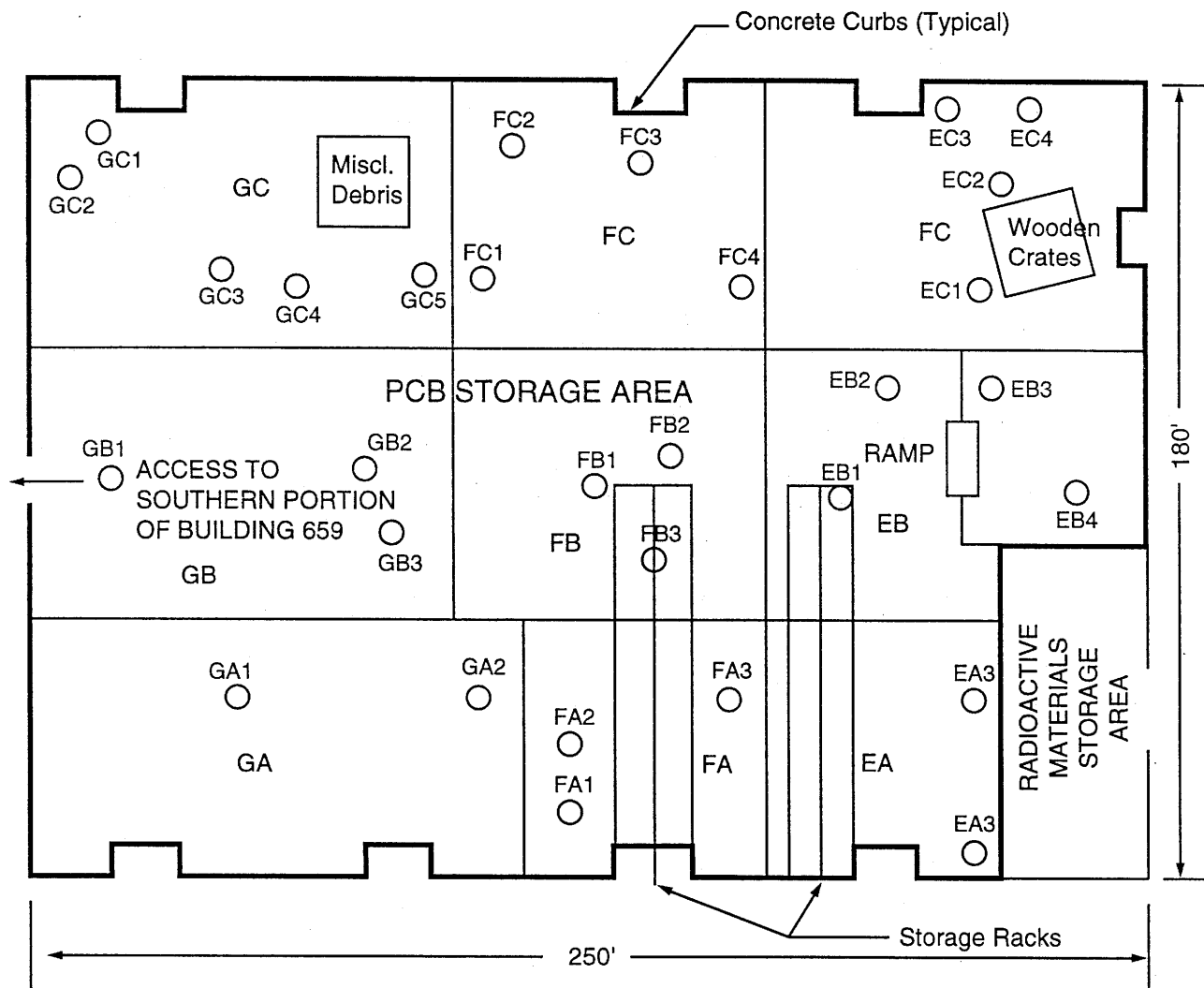
DEPARTMENT OF THE ARMY
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DECEMBER 1997

TOOELE ARMY DEPOT

UTAH

WIPE SAMPLE LOCATION
BLDG 659-PCB STORAGE AREA
(NORTHERN HALF)

FIGURE
1-3



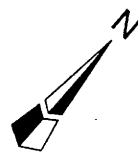
FLOOR AREA FIRST CLEANING
(41,650 SQ.FT.)

EA

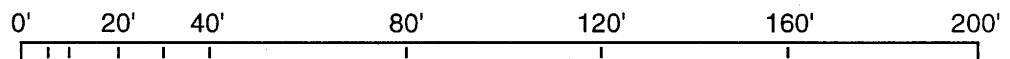
FLOOR AREA SECTION



WIPE SAMPLE LOCATION



GRAPHIC SCALE: 1"=40'



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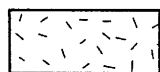
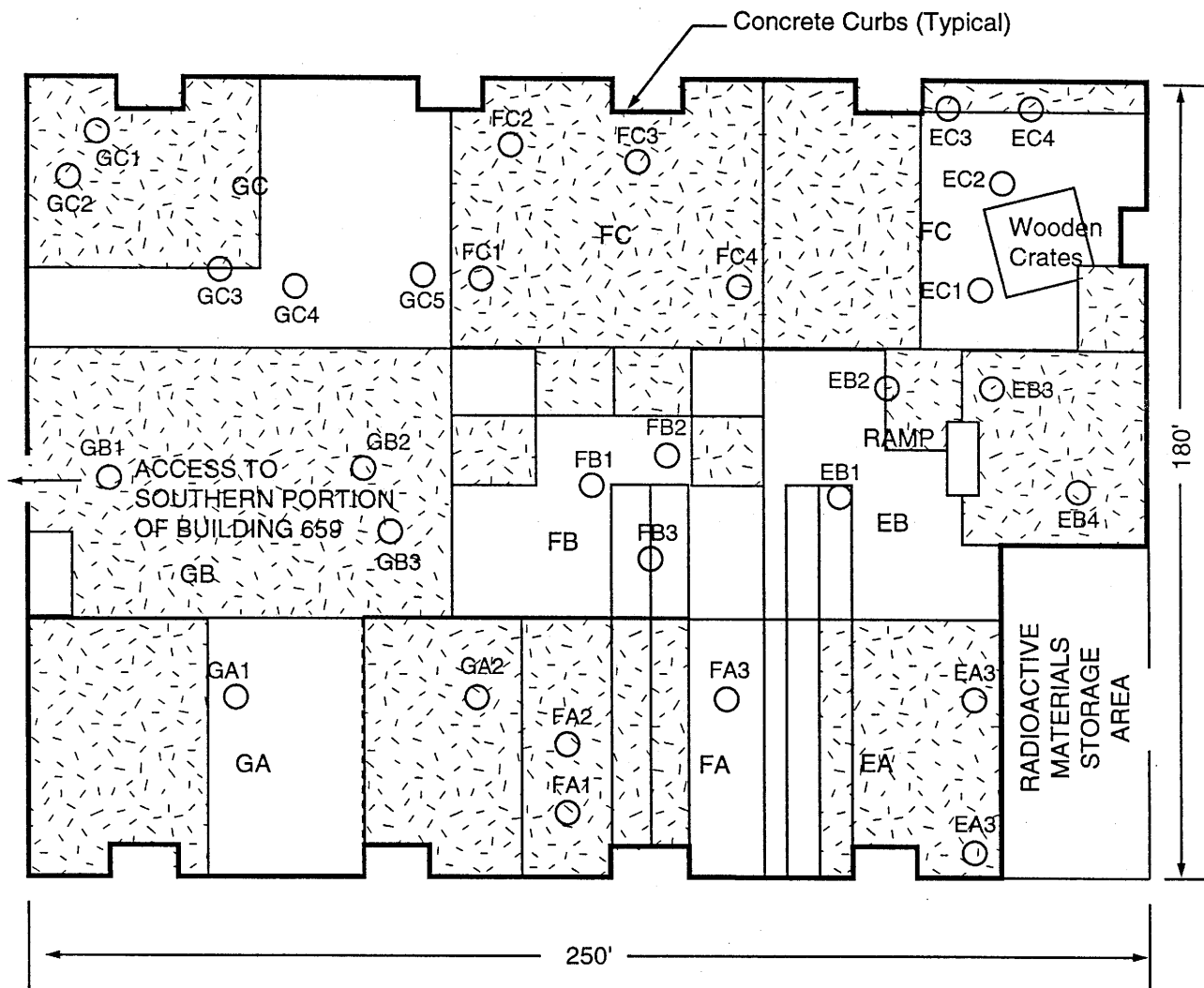
TOOELE ARMY DEPOT

UTAH

FIRST CLEANING AREA

BLDG 659-PCB STORAGE AREA
(NORTHERN HALF)

FIGURE
1-4



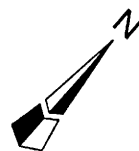
FLOOR AREA SECOND CLEANING
(29,700 SQ.FT.)

EA

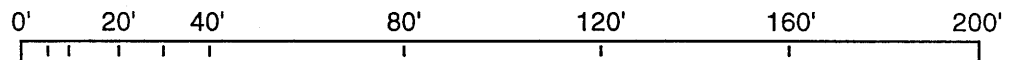
FLOOR AREA SECTION



WIPE SAMPLE LOCATION



GRAPHIC SCALE: 1"=40'



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DECEMBER 1997

TOOELE ARMY DEPOT

UTAH

SECOND CLEANING AREA

BLDG 659-PCB STORAGE AREA
(NORTHERN HALF)

FIGURE
1-5